WHAT IS CLAIMED IS:

~~1. A counterbalance system for an upward acting~~ door for counterbalancing at least part of the weight of said door when said door is moved between open and closed positions, said system comprising:

rotatable drums supported, respectively, generally above and adjacent to said door, said drums being adapted to have flexible members wound thereon, respectively, the free ends of said flexible members depending from said drums and connected to said door, respectively;

a torsion spring having opposed end portions, one of said end portions being connected to one of said drums;

an elongated tube disposed in sleeved relationship over said spring and operably connected to the other end portion of said spring; and

a winding mechanism connected to said tube and operable to hold said tube stationary during normal operation of said counterbalance system, said winding mechanism being operable to rotate said tube to rotate said other end portion of said spring to ~~adjust the torque applied by~~ said spring to said one drum.

2. The counterbalance system set forth in Claim 1 wherein:

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part of said

said winding mechanism includes a casing including a first gear supported for rotation on said casing and a second gear connected to said tube non-rotatable relative to said tube and drivenly engaged with said first gear.

3. The counterbalance system set forth in Claim 2 wherein:

said first and second gears comprise a worm and a ring gear meshed with said worm, respectively.

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4. The counterbalance system set forth in Claim 2 including:

indicia means on at least one of said casing and said tube for indicating the number of revolutions of said tube, or a portion thereof, with respect to said casing in response to operation of said winding mechanism to rotate said tube and said other end portion of said spring.

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~~5.~~ The counterbalance system set forth in Claim 3 including:

a counter mechanism associated with said winding mechanism and operable to indicate the number of torsional windings imparted to said spring by said winding mechanism.

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~~6.~~ The counterbalance system set forth in Claim ~~5~~ wherein:

said counter mechanism includes a pinion engaged with one of said gears of said winding mechanism and with a member which is translatable in response to rotation of said pinion and said spring to indicate the number of torsional windings imparted to said spring.

7. The counterbalance system set forth in Claim 1 wherein:

~~said system includes spaced apart brackets for operably supporting said drums; and~~

part of said

said winding mechanism includes a casing part supported on one of said brackets for holding said winding mechanism stationary with respect to said one bracket.

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8. The counterbalance system set forth in Claim 7 wherein:

said casing part includes a support plate adapted to be releasably connected to one of said brackets or to a stationary support structure and said winding mechanism includes a second casing part adapted to be releasably connected to said support plate for enclosing part of said winding mechanism.

9. The counterbalance system set forth in Claim 8 wherein:

said winding mechanism includes a first gear drivingly connected to said tube and a second gear meshed with said first gear and supported by said support plate.

10. The counterbalance system set forth in Claim 9 wherein:

said second gear comprises a worm gear having opposed trunnion portions and said support plate includes spaced apart support parts adapted to support said worm gear thereon for rotation relative to said support plate.

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11. The counterbalance system set forth in Claim 10 wherein:

said support parts on said support plate include opposed arcuate recesses extending at an angle with respect to the plane of said support plate for retaining said worm gear on said support plate when said worm gear is meshed with said ring gear.

~~12. The counterbalance system set forth in Claim~~ 1 wherein:

said drums are mounted on ~~an~~ elongated shaft extending between and supported on spaced apart support brackets by respective bearing means engageable with said shaft and with a bearing retainer engageable with said brackets, ~~respectively.~~

13. The counterbalance system set forth in Claim 12 wherein:

said brackets each include at least one flange projecting outwardly from a base part of said bracket and having an inclined slot formed therein for receiving said retainer slidably disposed therein and engageable with said flange in a working position of said counterbalance system.

14. The counterbalance system set forth in Claim 13 wherein:

said winding mechanism includes a casing enclosing a gear drive mechanism connected to said tube, and a flange formed on said casing and engageable with a second flange of said bracket for supporting said winding mechanism non-rotatably on said bracket.

15. The counterbalance system set forth in Claim 14 wherein:

said second flange of said bracket includes an inclined slot for receiving said casing of said winding mechanism for retaining said casing non-rotatably with respect to said second flange of said bracket.

16. The counterbalance system set forth in Claim 1 wherein:

said spring comprises a ~~torsion~~ coil spring and said other end portion of said spring is secured to a hub assembly including a hub member engageable with at least one coil of said spring for securing said hub member to said spring and a key plate connected to said hub member and engageable with said tube by cooperating means to prevent rotation of said hub assembly with respect to said tube.

17. The counterbalance system set forth in Claim 16 wherein:

said cooperating means to prevent rotation of said hub assembly with respect to said tube comprises spaced apart axially extending ~~key means~~ keys formed on said tube registrable in cooperating ~~slot means~~ slots formed on said key plate to prevent rotation of said hub assembly with respect to said tube while allowing said hub assembly and said other end portion of said spring to translate axially with respect to said tube.

18. The counterbalance system set forth in Claim 17 wherein:

said hub assembly includes a bushing member connected to said hub member and said key plate and including a central bore formed therein for receiving a shaft extending between and supported on spaced apart support brackets for said system.

19. The counterbalance system set forth in Claim 18 wherein:

said shaft is releasably connected to said cable drums for synchronizing the rotation of said cable drums with respect to each other during opening and closing of said door.

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20. The counterbalance system set forth in Claim 1 wherein:

~~each of said cable drums includes a hub portion;~~

said counterbalance system includes another torsion springs connected at one end portion to the other of said ~~each of said cable~~ drums, ~~respectively,~~ and to another ~~opposed~~ elongated tubes disposed in sleeved relationship over said other spring ~~springs, respectively~~; and

~~said system includes a~~ another winding mechanism connected to ~~each of said tubes~~ said other tube and operable to hold said other tube ~~tubes~~ stationary during normal operation of said counterbalance system, said winding mechanisms each being operable to rotate its associated tube to rotate the other end of the associated spring to adjust the torque applied by said springs to said drums, respectively.

21. The counterbalance system set forth in Claim 20 including:

an elongated synchronizing shaft extending between and connected to said drums, respectively, for synchronizing the rotation of said drums.

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~~22. The counterbalance system set forth in Claim 20~~ wherein:

said tubes each include at least one elongated axially extending key means formed thereon and said springs are each connected to a hub assembly, each said hub assembly including a key plate having at least one keyway means formed therein for engaging said keyplate with said key means on said tube to prevent rotation of said hub assembly with respect to said tube.

23. The counterbalance system set forth in Claim 22 wherein:

each said hub assembly includes a bore therein for supporting said hub assembly on an elongated shaft extending between spaced apart support brackets and supported on said brackets by spaced-apart bearing means, respectively, and each said hub assembly is supported on said shaft for rotation and axial translation relative to said shaft.

~~24~~ 23. The counterbalance system set forth in Claim ~~23~~ 22 wherein:

said drums are mounted on said shaft and include means for releasably connecting said drums to said shaft, respectively, for rotation therewith.

25. A counterbalance system for counterbalancing at least part of the weight of an upward acting door when said door is moved between open and closed positions, said counterbalance system comprising:

spaced-apart brackets mounted generally above and adjacent to said door;

an elongated shaft extending between and supported on said brackets;

opposed drums supported on said shaft, respectively, and releasably securable to said shaft for rotation in synchronization with each other, each of said drums including a flexible member wound thereon, said flexible members being connected at a free end depending from said drums to said door, respectively;

each of said drums including a hub portion connected to one end of a torsion coil spring, each of said springs extending axially from said hub portions of said drums toward each other;

opposed hub assemblies connected to the ends of said springs, respectively, opposite the ends connected to said drums and mounted in sleeved-relationship over said shaft for rotation relative to said shaft;

elongated spring winding tubes operably supported by said brackets and disposed in sleeved-relationship over said

springs and said shaft, respectively, said tubes extending toward each other between said brackets; and

a spring-winding mechanism operably connected to each of said tubes and to one of said brackets, respectively, for holding said tubes, respectively, stationary during operation of said counterbalance system to counterbalance the weight of said door.

26. The counterbalance system set forth in Claim 25 wherein:

said winding mechanisms include cooperating gears operable to rotate said tubes relative to said brackets, respectively, to effect torsional winding of said springs, respectively.

27. The counterbalance system set forth in Claim 26 wherein:

one of said gears of each of said winding mechanisms is connected to one of said tubes for rotation therewith.

28. The counterbalance system set forth in Claim 27 wherein:

said one gear comprises a ring gear having a plurality of circumferentially spaced key parts cooperable with keyway means formed in said tube whereby said ring gear and said tube are connected to each other for rotation of said tube in response to rotation of said ring gear.

29. The counterbalance system set forth in Claim 28 wherein:

said ring gear and said tube have cooperating bosses and recesses formed thereon, respectively, for securing said ring gear to said tube in a predetermined position thereon.

30. The counterbalance system set forth in Claim 25 wherein:

said shaft is mounted on spaced apart bearing assemblies, said bearing assemblies are mounted, respectively, on said brackets, respectively.

31. In a counterbalance system for counterbalancing at least part of the weight of an upward acting door, spaced apart brackets adapted to mount on a wall generally above and adjacent to said door, opposed drums supported on said brackets, respectively, for rotation with respect to said brackets, each of said drums including a flexible member wound thereon, said flexible members each being connected at a free end depending from said drum to said door, each of said drums including a hub portion operably connected to one end of a spring, opposed hub assemblies connected to opposite ends of said springs, respectively, and members adapted to be supported stationary with respect to said wall and connected to said hub assemblies, respectively, for holding said hub assemblies stationary to anchor said opposite ends of said springs.

32. The counterbalance system set forth in Claim 31 wherein:

said members connected to said hub assemblies comprise elongated tubes disposed in sleeved relationship over said springs, respectively.

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31 33. The counterbalance system set forth in Claim 30 including:

spring winding mechanisms connected to said tubes for rotating said tubes and said hub assemblies to effect winding said springs, respectively.

32 34. The counterbalance system set forth in Claim 31 wherein:

said spring winding mechanisms are mounted on said brackets, respectively.

33 35. The counterbalance system set forth in Claim 31 wherein:

said hub assemblies are connected to said tubes for axial sliding movement with respect to said tubes but are non-rotatable relative to said tubes, respectively.

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